6.5 Facility Shutdown Plan & D&D&D Pre-Plan

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Plan

OU 7-10 Glovebox Excavator Method Project Facility Shutdown Plan and Deactivation, Decontamination, and Decommissioning Pre-Plan

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OU 7-10 Glovebox Excavator Method Project Facility Shutdown Plan and Deactivation, Decontamination, and Decommissioning Pre-Plan

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ABSTRACT

The Operable Unit (OU) 7-10 Glovebox Excavator Method Project is the project chosen by the U.S. Department of Energy to implement the path forward for demonstrating retrieval, characterization, and interim storage of transuranic waste from OU 7-10 (Pit 9) located in the Subsurface Disposal Area within the Radioactive Waste Management Complex at the Idaho National Engineering and Environmental Laboratory. This project was selected for achieving the objectives in the *Record of Decision: Declaration of Pit 9 at the Radioactive Waste Management Complex Subsurface Disposal Area at the Idaho National Engineering Laboratory, Idaho Falls, Idaho,* as modified by the 1995 and 1998 Explanation of Significant Difference documents, by demonstrating retrieval of a portion of the transuranic waste buried in OU 7-10. Information and experience obtained from the execution of the project can be used to support the overall activities to remediate other transuranic waste buried within the Subsurface Disposal Area.

The facility shutdown plan and decontamination, deactivation, and decommissioning pre-plan describes the approach that the Idaho National Engineering and Environmental Laboratory will use for shutting down and dispositioning the project facility following completion of the waste retrieval demonstration objectives. The pre-plan builds on the planning that was begun in the *OU 7-10 Glovebox Excavator Method Project Conceptual Design Report for Critical Decision 1* and describes in further detail the activities, methods, and equipment to be used as well as the intermediate and ending conditions to be achieved. The pre-plan also provides preliminary information on the (1) types of waste expected to be generated during decontamination, deactivation, and decommissioning, (2) rough orders of magnitude volume estimates, and (3) anticipated disposal paths.

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ACRONYMS

AMWTP	Advanced Mixed Waste Treatment Project
ARAR	applicable or relevant and appropriate requirements
BBWI	Bechtel BWXT Idaho, LLC
CAM	constant air monitor
CDR	conceptual design report
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFA	Central Facilities Area
D&D&D	deactivation, decontamination, and decommissioning
DOE	U.S. Department of Energy
DOE-ID	U.S. Department of Energy Idaho Operations Office
DSA	documented safety analysis
DSS	dust-suppression system
EDF	engineering design file
ESD	explanation of significant differences
FFS	Facility Floor Structure
HASP	health and safety plan
HEPA	high-efficiency particulate air
H&V	heating and ventilation
ICDF	Idaho National Engineering and Environmental Laboratory Comprehensive Environmental Response, Compensation and Liability Act Disposal Facility
IDAPA	Idaho Administrative Procedures Act
INEEL	Idaho National Engineering and Environmental Laboratory
IW	industrial waste

LDR	land disposal restriction
LLW	low-level waste
LMAES	Lockheed Martin Advanced Environmental Systems
M&O	management and operating (contractor)
MLLW	mixed low-level waste
MTRU	mixed transuranic waste
NA	not applicable
NCP	National Contingency Plan
NESHAPS	National Emission Standards For Hazardous Air Pollutants
NFPA	National Fire Protection Association
OU	operable unit
PCB	polychlorinated biphenyl
PGS	Packaging Glovebox System
PLC	programmable logic controller
PPE	personal protective equipment
RAM	remote air monitor
RCRA	Resource Conservation and Recovery Act
RCS	Retrieval Confinement Structure
RCT	radiological control technician
ROD	record of decision
RWMC	Radioactive Waste Management Complex
SDA	Subsurface Disposal Area
SSC	structures, systems, and components
SWEPP	Stored Waste Examination Pilot Plant

TBC	to be considered
TBD	to be determined
TRU	transuranic
TSDF	treatment, storage, and disposal facility
TSR	technical safety requirement
WAG	waste area group
WES	Weather Enclosure Structure
WMF	Waste Management Facility

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DEFINITIONS

This section provides definitions for certain terms in the context in which they are used in this document. Selection of the terms to be defined was based on the potential for confusion either because of (1) nonstandard use (e.g., terms carried over from previous project documents for consistency although they are not part of the standard deactivation, decontamination, and decommissioning [D&D&D] vernacular), (2) use of terms that may have alternate meanings depending on the reader's background, education, or occupation, and (3) nondescript word use meant to carry a specific meaning within the context of this plan.

Deactivation, decontamination, and decommissioning: Generally refers to the set of activities or phase of the project dealing with the final disposition of the facility; for example, permanently disabling or deenergizing equipment, final decontamination (if necessary), and dismantlement for reuse or disposal.

End-state criteria: The criteria used as the basis for determining successful achievement of project objectives relating to final conditions for the facility, equipment, and associated materials. For example, this includes release criteria established for facility components, equipment, and materials and site-specific thresholds for radiological and hazardous contaminants present in specified site media (e.g., soil and ground water). Independent verification personnel use this criteria when validating the accuracy and completeness of post-D&D&D measurements.

Layup: A period, rather than a process, during which the facility is monitored and maintained in stable and known conditions. Note: This term is comparable to the term "surveillance and maintenance" in the standard D&D&D vernacular.

Operations: (1) A generic term (when not qualified) that is used to refer to activities performed by the Operations organization (e.g., waste retrieval, underburden sampling, and shutdown activities) and (2) the Idaho National Engineering and Environmental Laboratory organization responsible for achieving the overall project objectives (see retrieval operations [below] for a listing of the overall project objectives) by performing (e.g., the waste retrieval, underburden sampling, waste characterization, and packaging).

Pulled: A project-specific term used to describe the action taken by operations personnel to relocate subsurface investigation soil-probe casings from the installed vertical locations so that excavation efforts can continue. Relocation of the probe casings will be within the confines of the retrieval demonstration area (i.e., casings will not be taken out of the confinement boundary).

Post-retrieval: A project-specific term that collectively refers to the shutdown, layup, and D&D&D project phases, or activities included therein.

Retrieval operations: The project phase, or set of activities, that directly supports achievement of all four of the overall project objectives, which are to (1) demonstrate waste zone retrieval (i.e., excavation), (2) provide information on any contaminants of concern present in the underburden (i.e., underburden sampling and analysis), (3) characterize waste zone material for safe and compliant storage (e.g., waste screening, sampling, and analysis; in-process fissile measurements; and drum assay), and (4) package waste zone material in containers acceptable at the Advanced Mixed Waste Treatment Project (i.e., waste repackaging, staging, and transport).

Shutdown (also safe shutdown): (1) The set of activities (i.e., process) performed to identify and mitigate facility hazards to place said facility in stable and known conditions that are cost-effective to maintain and (2) the state of the facility after shutdown activities have been successfully performed. Note: This term is related to the term "deactivation" in the standard D&D&D vernacular, which implies permanent disabling of equipment. However, as used in this plan, shutdown relative to equipment and systems implies temporary versus permanent disabling or deenergizing (e.g., disconnecting equipment from its source of power by an easily reversible method). Deactivation as a part of D&D&D has a more permanent connotation.

OU 7-10 Glovebox Excavator Method Project Facility Shutdown Plan and Deactivation, Decontamination, and Decommissioning Pre-Plan

1. INTRODUCTION

1.1 Background

The *Record of Decision: Declaration of Pit 9 at the Radioactive Waste Management Complex Subsurface Disposal Area at the Idaho National Engineering Laboratory, Idaho Falls, Idaho* (DOE-ID 1993) specifies environmental remediation of transuranic (TRU) waste from Waste Area Group (WAG) 7, Operable Unit (OU) 7-10 (Pit 9), which is located in the Subsurface Disposal Area (SDA) within the Radioactive Waste Management Complex (RWMC) at the Idaho National Engineering and Environmental Laboratory (INEEL). The location of the RWMC within the INEEL is shown in Figure 1 and a graphic representation of the SDA showing an expanded view of the OU 7-10 Project area is shown in Figure 2.

The *Waste Area Group 7 Analysis of OU 7-10 Stage II Modifications* (INEEL 2001) identifies a feasible approach retrieving waste from OU 7-10. The OU 7-10 Glovebox Excavator Method Project was established to accomplish the objectives presented in that report. The overall objectives for the project are as follows:

- Demonstrate waste zone material retrieval
- Provide information on any contaminants of concern present in the underburden
- Characterize waste zone material for safe and compliant storage
- Package waste zone material in containers acceptable at the Advanced Mixed Waste Treatment Project (AMWTP) Facility.

This scope of work was requested by the U.S. Department of Energy Idaho Operations Office (DOE-ID) in support of the *Federal Facility Agreement and Consent Order for the Idaho National Engineering Laboratory* (DOE-ID 1991), the OU 7-10 Record of Decision (ROD) (DOE-ID 1993), and Appendix A of the *Remedial Design/Remedial Action Scope of Work and Remedial Design Work Plan: Operable Unit OU 7-10 (Pit 9 Interim Action)* (LMITCO 1997).

The activities presented in this document are based on requirements contained in *OU 7-10 Glovebox Excavator Method Technical and Functional Requirements* (INEEL 2002a). The OU 7-10 Technical and Functional Requirements document (INEEL 2002a) establishes the technical baseline for the project and links the requirements presented in the OU 7-10 ROD, the 1995 and 1998 Explanation of Significant Differences (ESDs) documents (DOE-ID 1995; 1998), and Appendix A of the OU 7-10 Project Interim Action Plan (LMITCO 1997).

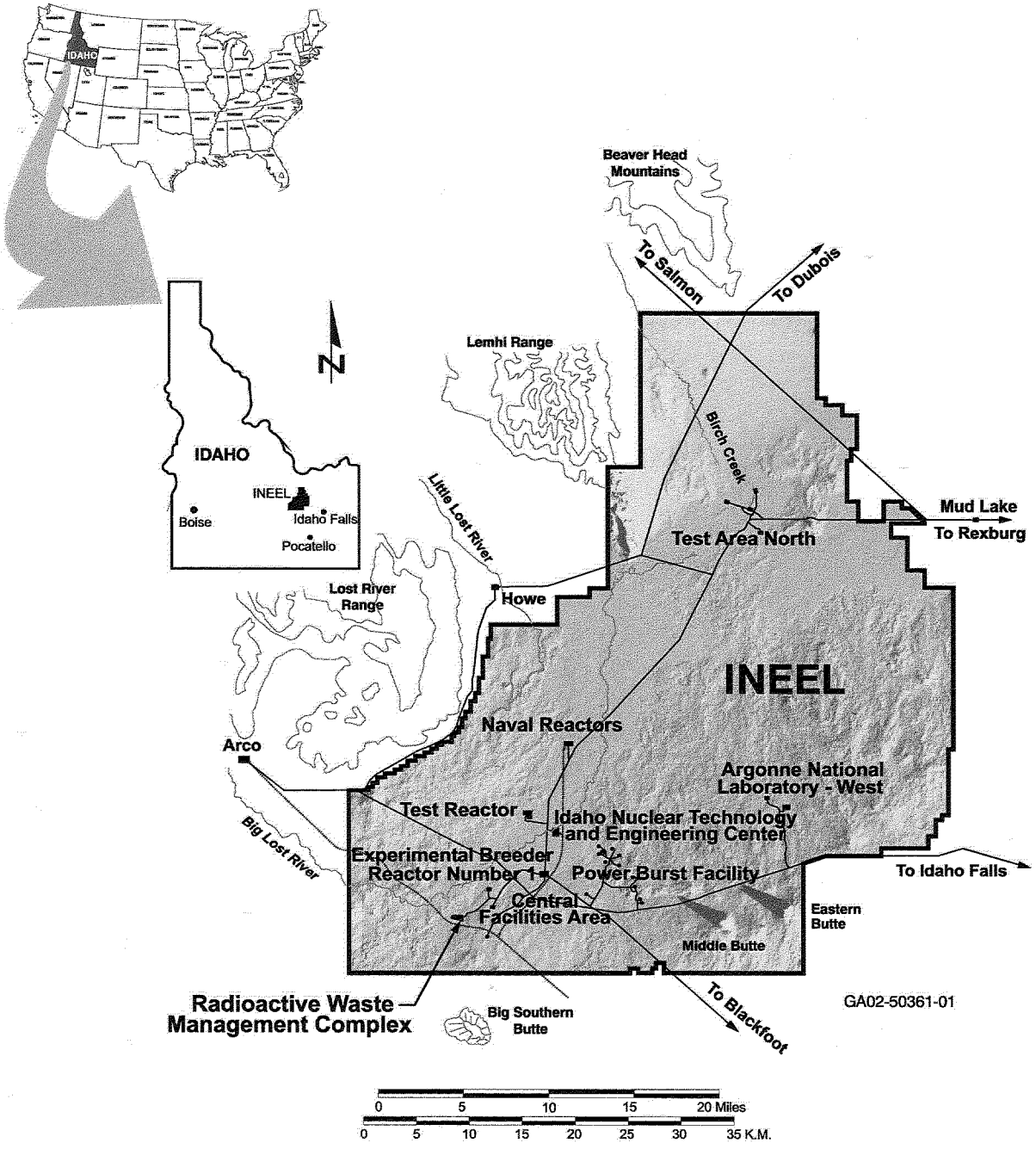

Figure 1. Map of the Idaho National Engineering and Environmental Laboratory showing the location of the Radioactive Waste Management Complex.

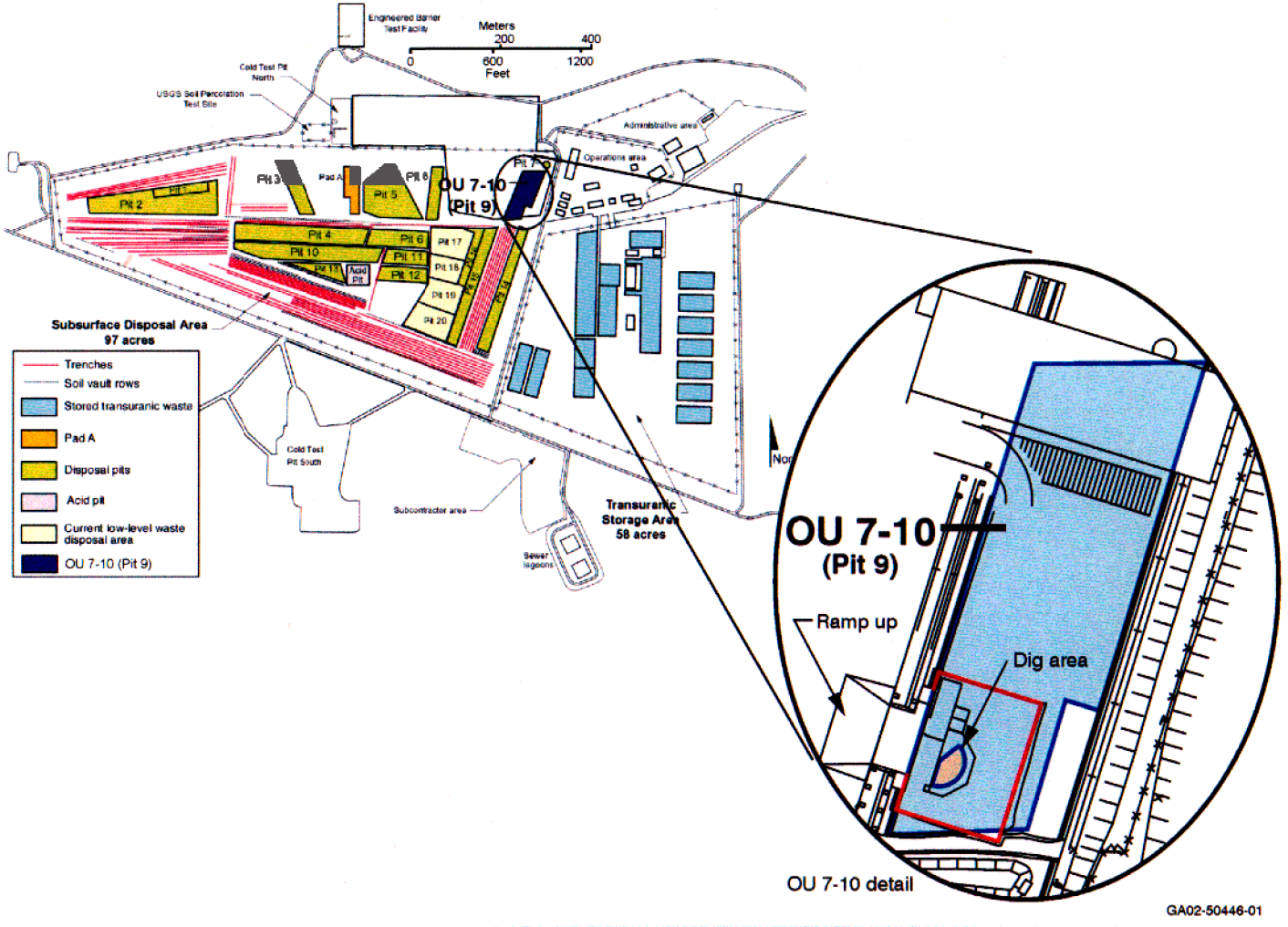

Figure 2. Map of the Subsurface Disposal Area of the Radioactive Waste Management Complex showing the location and an expanded view of OU 7-10 (Pit 9).

1.2 Purpose

The purpose of this plan is to satisfy two primary objectives, which are listed below:

1. This plan will build on and continue the planning that was begun in the *OU 7-10 Glovebox Excavator Method Project Conceptual Design Report for Critical Decision 1* (INEEL 2002b) relative to the post-retrieval life-cycle phases of the project facility. The plan will communicate pertinent information (e.g., plans, feedback about design impacts, and project-related information) to members of the project team as well as to external stakeholders.

2. This plan will support and provide documentation that capital asset life-cycle planning and planning for deactivation, decontamination, and decommissioning (D&D&D) has been performed pursuant to regulatory and U.S. Department of Energy (DOE) requirements.

1.2.1 Objective 1: Planning and Communication

Based on assumptions about initial conditions and proposed ending conditions, this plan describes the following:

- The approach the project intends to use to place project facilities, systems, and materials into stable and known conditions

- The activities necessary to maintain these conditions until final facility disposition

- A conceptual approach for D&D&D.

This plan also predicts equipment and material disposition paths and provides volume estimates for associated waste streams. The process descriptions and information contained in this document will be provided as input to the design team for identification and resolution of design impacts (see Appendix A). The process descriptions, sequencing, and timeline presented herein will provide a basis for interface identification as well as for more detailed cost and schedule estimation by the project team. In addition, this plan will serve as a mechanism to communicate these approaches, process descriptions, assumptions, ending conditions, and other pertinent information to external stakeholders.

1.2.2 Objective 2: Compliance with Regulations and Requirements

As described below, this plan helps to satisfy DOE and regulatory requirements in the following subject areas:

- Planning for the complete life cycle of capital assets during the design phase and describing a proposed decommissioning method and conversion to other use[a]

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a. Required by DOE O 430.1A, "Life Cycle Asset Management," and DOE M 435.1-1, "Radioactive Waste Management Manual." These documents are applicable to this project through Attachment G, "List of Applicable Directives (List B)," to the INEEL management and operating contract (Contract No. DE-AC07-99ID13727).

- Selecting design features and materials to facilitate decontamination and decommissioning[b]
- Describing facility ending conditions (after operations, shutdown, and decommissioning)[c]
- Generating, handling, and disposing of radioactive and hazardous waste.[d]

1.2.2.1 Life-Cycle Planning. This plan, which includes described approaches, processes, methods, and equipment, is evidence of the performance of life-cycle planning for the post-retrieval life-cycle phases during facility design. Section 3.3 of this plan describes the proposed decommissioning approach (i.e., total removal of the project facility via dismantlement).

1.2.2.2 Features and Materials to Facilitate Decontamination and Decommissioning. Appendix A of this plan identifies areas where design features and materials were selected to facilitate D&D&D or reuse of equipment or structures.

1.2.2.3 Facility Ending Conditions. Facility conditions expected to be present at specific points of time in the post-retrieval life-cycle phases of the facility have been forecasted as a basis for the development of this plan. These specific points in time include the following:

- Starting conditions at the beginning of shutdown activities (i.e., ending conditions after waste retrieval and underburden sampling) (see Section 2.3.1)
- Ending conditions after successful completion of shutdown activities (i.e., conditions after the facility is placed into safe, stable, and known conditions for layup) (see Section 3.1.6)
- Ending conditions after the layup period (i.e., starting conditions at the beginning of D&D&D) (see Section 3.2.3)
- Ending conditions after final facility decommissioning (i.e., after facility removal via dismantlement and subsequent OU 7-10 surface restoration activities) (see Section 2.3.2).

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b. Required by 10 CFR 835.1002, "Occupational Radiation Protection," Part 1002, "Facility Design and Modification," which applies to this project through Attachment K, "List of Applicable Laws and Regulations (List A)," to the INEEL management and operating (M&O) contract (Contract No. DE-AC07-99ID13727). Also required by DOE O 420.1, "Facility Safety," and DOE M 435.1-1, "Radioactive Waste Management Manual," which apply to this project through Attachment G, "List of Applicable Directives (List B)," to the INEEL management and operating contract.

c. Required by DOE O 430.1A, "Life Cycle Asset Management," which applies to this project through Attachment G, "List of Applicable Directives (List B)," to the INEEL M&O contract (Contract No. DE-AC07-99ID13727).

d. Required by DOE Order 5400.1, "General Environmental Protection Program," and DOE M 435.1-1, "Radioactive Waste Management Manual," which apply to this project through Attachment G, "List of Applicable Directives (List B)," to the INEEL M&O contract (Contract No. DE-AC07-99ID13727). Waste generation, handling, and disposal must also comply with Executive Orders EO12856, "Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements," (58 FR 150) and EO13101, "Greening the Government through Waste Prevention, Recycling, and Federal Acquisition," (63 FR 179) as required by DOE O 435.1 (from Attachment G, "List of Applicable Directives [List B]," to the INEEL management and operating contract).

1.2.2.4 Waste Generation, Handling, and Disposition Planning. This plan, in conjunction with the *Waste Management Plan for the OU 7-10 Glovebox Excavator Method Project* (INEEL 2002c), identifies expected waste types and disposition paths for materials resulting from shutdown and D&D&D activities in accordance with DOE and regulatory requirements for waste planning. In addition, this plan provides rough order-of-magnitude waste-volume estimates for these waste streams.

1.3 Applicability

This shutdown plan applies to project facility life-cycle events that follow the completion of retrieval operations (i.e., waste retrieval, sampling, and packaging). These events have been divided into three distinct phases (listed below) in accordance with the process described in the OU 7-10 Project Conceptual Design Report (CDR) (INEEL 2002b). These three phases are:

1. Facility shutdown
2. Facility layup
3. Facility D&D&D.

1.4 Scope

1.4.1 Activities

1.4.1.1 Facility Shutdown Phase. The facility shutdown phase begins after retrieval operations are complete and project management determines that the overall goals of the demonstration have been achieved. The scope of activities performed during shutdown includes the following:

- Reduction and immobilization of removable surface contamination
- Stabilization of the excavated portion of OU 7-10
- Other actions necessary to place the facility and associated equipment into a safe and cost-efficient condition for the layup phase.

1.4.1.2 Facility Layup Phase. The layup phase immediately follows shutdown of the facility. The duration of this phase will be kept to a minimum by initiating preparations for D&D&D as soon as possible. However, the facility has been designed such that this phase could be safely maintained for up to 1 year. The scope of activities performed within the facility during the layup phase includes surveillances, monitoring, and facility and equipment maintenance. Examples include routine radiological control surveillances to ensure continued confinement and control of radioactive contamination, monitoring of radiation and airborne contamination, monitoring of environmental emissions, and periodic maintenance of active and deactivated equipment. Concurrently, preparations will be underway for the D&D&D phase. These preparations include but are not limited to the following:

- Development of plans, procedures, and other documents necessary for performing the facility D&D&D

- Accomplishment of a readiness assessment
- Mobilization of personnel and equipment resources
- Reactivation of the facility for D&D&D.

1.4.1.3 Facility Deactivation, Decontamination, and Deactivation Phase. The D&D&D phase for the project will primarily involve deactivation and dismantlement of the project facility with site restoration of the OU 7-10 surface and associated project work areas. In addition, debris treatment, excess equipment disposition, material transportation, and waste disposal will be performed during the D&D&D phase.

1.4.2 Structures

The scope of this plan includes developing shutdown and D&D&D processes, describing conditions, and identifying final dispositions for the following primary project structures:

- **Weather Enclosure Structure** including the insulated fabric membrane, structural steel support frame, personnel and overhead doors, and interior vestibule walls. Installed equipment includes the power distribution system, uninterruptible power supply, lighting, compressed air distribution system, life safety and fire protection systems, and the heating and ventilation (H&V) system (e.g., resistance heaters, ductwork, fans, and high-efficiency particulate air [HEPA] filters and housings).
- **Facility Floor Structure** (FFS) including the shoring box, skirt, structural steel frame, decking, and floor plates.
- **Retrieval Confinement Structure** (RCS) including modular wall panels with integral structural supports (including those of the personnel monitoring and access areas), ventilation equipment, lighting, fire protection systems, doors, windows, dust-suppression system (DSS) piping, and glove and bag-out ports.
- **Packaging Glovebox System** (PGS) including structural supports, enclosure panels and windows, ventilation, lighting, work platforms, drum change-out ports and enclosures, fire protection systems, and glove and sample or equipment bag-out ports.
- **Exhaust stack**.
- **Fire riser building** including compressor, firewater lines and valves, and alarm system conduit.
- **Field support trailers** including the radiological control field trailer, Waste Management Facility (WMF) -645, -646, -657, and possibly WMF-613.

1.4.3 Equipment

The scope of this plan includes developing shutdown and D&D&D processes, describing conditions, and identifying final dispositions for the following equipment items:

- Process equipment
  - Excavator including end-effectors (e.g., buckets, hydraulic hammer [core sampler]), and RCS interface
  - PGS hoists, transfer carts, and cart drive system motors
- Process support equipment
  - Personal protective equipment (PPE) storage and shower trailer (if used)
  - PGS waste-handling and -sizing tools
  - Skid-mounted electrical load center
  - Portable diesel generator (standby power)
  - Breathing air compressor trailer
  - Plant air compressor
  - Dust suppression equipment (i.e., pumps, spraying and fogging controls) and water storage tanks
  - Closed-circuit television monitoring and video recording equipment
  - Cargo container storage units (if used)
  - Decontamination trailer (if used)
  - Uninterruptible power supply
- Material handling equipment
  - Forklifts and battery charging equipment
  - Drum handling and weighing equipment
  - Sample cold storage equipment

- Overburden soil boxes and associated handling equipment

- Radiological safety equipment
  - Fissile material monitors
  - Radiation monitoring equipment
  - Airborne contamination (alpha and beta) monitoring equipment
  - Personnel contamination monitoring equipment (e.g., walk-through units and hand-held friskers)
  - Criticality alarm system

- Safety equipment
  - Personal protective equipment
  - Portable eyewash stations.

1.4.4 Materials

The scope of this plan includes describing conditions and identifying final dispositions for the following materials:

- Overburden soil (if not disposed of during retrieval operations)
- Fill material (i.e., pit run gravel) used for access ramp and FFS leveling course
- Geotextile fabric placed on the OU 7-10 surface before project initiation
- Field run electrical cables and conduit
- Temporary concrete support pads.

1.4.5 Site Improvements

The scope of this plan includes addressing any restoration work, if necessary, for the following site improvements (i.e., returning improved areas back to pre-project conditions):

- New access roads (e.g., gravel)
- Outside operations area (e.g., gravel)
- New parking areas (e.g., gravel)

- Storm water drainage modifications (e.g., culverts, pipes, drains, and berms)
- Other earthwork modifications.

1.4.6 Scope Limitations

This plan is not intended to be a Resource Conservation and Recovery Act (RCRA) (42 USC § 6901 et seq.) closure plan, pursuant to 40 CFR 264.112, "Closure Plan; Amendment of Plan"; or a closure plan pursuant to DOE M 435.1-1, "Radioactive Waste Management Manual," Chapter IV, Section Q(1), "Disposal Facility Closure Plans." Further, the actions discussed in this plan will not constitute final or interim closure of OU 7-10 or any part thereof. However, activities performed relative to removing project facilities from OU 7-10, restoration of the protective soil cover, and disposition of associated waste will comply with all (1) applicable or relevant and appropriate requirements (ARARs), (2) to-be-considered (TBC) requirements, and (3) applicable DOE orders. This plan is based primarily on design information and assumptions. Changes to address actual facility conditions after construction and operation are anticipated.

1.4.7 Exclusions to the Scope

Items excluded from the scope of this plan include the following:

- Lockheed Martin Advanced Environmental Systems (LMAES) process and retrieval buildings, associated equipment, and appurtenances
- AMWTP facilities and equipment
- RWMC facilities (other than those loaned for project use)
- Residual sample materials and sample analysis waste resulting from waste characterization for safe storage and from underburden assessments for migration of contaminants of concern
- Any retrieved waste drums returned to the project from the AMWTP Facility.

2. ASSUMPTIONS AND BASIS

2.1 Assumptions

2.1.1 General

2.1.1.1 Funding Restrictions. Project planning through completion of the retrieval activities is based on the preliminary funding profiles. Note that project funding will include D&D&D in Fiscal Year 2004.

2.1.1.2 Environmental Regulation. It is assumed that because this project is a Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 USC § 9601 et seq.) remedial action, obtaining environmental permits will not be required. It is assumed that the versions of ARARs that apply to Stage II[e] are those that were in effect in the *Federal Register* when the OU 7-10 ROD (DOE-ID 1993) was signed, except as modified by the 1998 ESD to the OU 7-10 ROD (DOE-ID 1998), which incorporated the Toxic Substances Control Act ARARs (40 CFR 761). In addition, it is assumed that DOE Order 435.1, "Radioactive Waste Management,"(which cancels DOE Order 5820.2A) applies in lieu of DOE Order 5820.2A, "Radioactive Waste Management." Further, it is assumed that the shipment of waste off-Site will comply with all applicable administrative and substantive requirements. Changes will only be incorporated as agreed with DOE based on evaluation of scope, schedule, and cost impacts through a formal change control process.

2.1.1.3 **Current Idaho National Engineering and Environmental Laboratory Procedures.** It is assumed that the project (including post-retrieval project phases) will be performed using current INEEL procedures in effect at the time of the project conceptual design (January 2002).

2.1.1.4 Requirements. It is assumed that agency (i.e., U.S. Environmental Protection Agency and the Idaho Department of Environmental Quality) reviews do not result in changes to established project objectives or technical and functional requirements.

2.1.1.5 **Project Objectives.** It is assumed that agencies will accept that the project objectives described in the WAG 7 Analysis of OU 7-10 Stage II Modifications (INEEL 2001), Section 3.3, "Stage II Objectives and Requirements," meet the 1998 ESD (DOE-ID 1998) objectives relative to Stage II.

2.1.1.6 Hazard Category. It is assumed that the facility hazard category can be reduced as the hazardous and radiological releasable inventories are reduced through mitigation and decontamination actions.

2.1.1.7 Risk Items. It is assumed that management and mitigation plans as identified in the *Risk Management Plan for the OU 7-10 Glovebox Excavator Method Project* (INEEL 2002d) will be appropriate for identified risk items.

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e. Stage II refers to the precursor project that implemented the contingency approach to the OU 7-10 Record of Decision (DOE-ID 1993).

2.1.1.8 Post-Retrieval Maintenance. It is assumed that the Weather Enclosure Structure (WES), RCS, and PGS will remain in place until disposition as implemented by D&D&D and that these structures can be decontaminated to allow safe shutdown. It is assumed that the WES and storage cargo containers (if used) will remain uncontaminated and will not require decontamination.

***2.1.1.9* Fissile Material.** It is assumed that accountability of fissile material will not be an issue during post-retrieval life-cycle phases.

2.1.2 Scope and Schedule Assumptions

2.1.2.1 Critical Lifts. It is assumed that no critical lifts will be required.

2.1.2.2 Idaho National Engineering and Environmental Laboratory Equipment Availability. It is assumed that all equipment to be used will be available when needed and will not require upgrading, modification, or repair.

2.1.2.3 Project Equipment Availability. It is assumed that project equipment, including the excavator, breathing air compressor trailer, plant air compressor, standby diesel generator, skid-mounted load center, and temporary power cables will be available for use during the shutdown, layup, and D&D&D phases. It is assumed that additional necessary equipment, tools, and PPE will be available as needed to support the schedule.

2.1.2.4 Idaho National Engineering and Environmental Laboratory Equipment Conditions. It is assumed that the equipment will be in good operating condition and no allowance will be made for equipment operating in severe conditions or beyond periodic maintenance services.

2.1.2.5 Idaho National Engineering and Environmental Laboratory and Project Equipment Cleaning. It is assumed that INEEL or project equipment outside the confinement structure will not require decontamination (other than a wipe down), cleaning, or replacement.

2.1.2.6 Utilities. It is assumed that all utilities will have the required capacities available and can be secured at the locations indicated on the conceptual drawings.

2.1.2.7 Storage Containers. It is assumed that the four existing government-owned Connex trailers will be available to use for storage during the post-retrieval life-cycle phases and that they can be used at no additional cost to the project. In addition, it is assumed that these trailers will require only connection to electrical service and fire detection systems to make them suitable for the intended use and that no modifications or additions to the interior of the trailers will be required.

2.1.2.8 Non-Idaho National Engineering and Environmental Laboratory Equipment. It is assumed that subcontractor leased equipment will not require decontamination (other than a wipe down) or replacement. It is assumed that all non-INEEL equipment will be free released at the end of use.

2.1.2.9 Lockheed Martin Advanced Environmental Systems. It is assumed the on-going LMAES litigation or Site activities will have no adverse effect on the post-retrieval life-cycle phases of the project.

2.1.2.10 Existing Trailers. It is assumed that three existing trailers (WMF-657, -645, -646) will be available for use during operations (including post-retrieval operations) and that the current configuration and condition of the trailers will serve the intended functions without repair or alteration. No additional funding will be estimated for such modifications.

2.1.2.11 Office Space. It is assumed that this project will supply additional office space beyond the identified existing trailers for 15 people (approximately 139 m^2 [1,500 ft^2]) for 1 year after shutdown. This added space is assumed to be in the form of leased trailers and will be needed to support shutdown, layup, and D&D&D operations.

2.1.2.12 Readiness Assessment. It is assumed that (1) no schedule impacts from identified rework items outside the project scope will be identified, (2) no additional schedule time will be allowed for repeating all or portions of the D&D&D management self-assessment or readiness assessment sequence of activities because of failure, and (3) that the D&D&D readiness assessment will be successful, involving one scheduled cycle.

2.1.2.13 Probe Casing Extraction. Before the start of the waste retrieval demonstration (completed in Stage I), a series of probe casings was placed in the ground in the area targeted for the waste retrieval demonstration to obtain waste data. It is assumed that the probe casings will be pulled out only as necessary to support waste retrieval operations.

Note: After being pulled (see definitions), extracted probe casings will remain in the pit; that is, they will be laid down in the bottom of the excavation area, away from excavation activities, and at no time removed from the confinement area.

2.1.2.14 Availability of Funding. It is assumed that funding necessary to perform the project within the schedule will be available.

2.1.2.15 Completion. It is assumed that the project fieldwork will be complete when (1) all retrieved materials have been stored, (2) facilities have been either cleaned and released for reuse or decontaminated, dismantled, and removed from the project site, and (3) waste materials resulting from D&D&D have been transferred for disposal.

2.1.2.16 Start of Shutdown and Project Completion Timing. It is assumed that facility shutdown operations will begin after (1) completion of retrieval operations (including underburden sampling activities), (2) retrieved and packaged waste has been accepted for storage or treatment at the AMWTP, and (3) approval has been received from project management to begin the shutdown phase. It is assumed that D&D&D operations will be completed as early as possible but no later than 1 year after the start of shutdown.

Note: Any delays that occur between the completion of waste retrieval and underburden sampling and the start of shutdown operations are assumed to be part of retrieval operations and are not shown as a component of the post-retrieval operations timeline.

2.1.2.17 Field Shift Schedules. It is assumed that shutdown and D&D&D operational efforts will each require four crews working a total of 7 days per week and 24 hours per day to reduce risk and conclude the project in a timely manner. It is assumed that a single crew working a total of 4 days per week and 10 hours per day will be sufficient for D&D&D preparation activities performed during the layup phase. Routine monitoring performed during the layup phase will be performed by Site labor-pool personnel as needed. It is assumed that site mobilization and demobilization activities will be performed using two crews working a total of 7 days per week and 12 hours per day, as necessary (i.e., one crew will be sufficient if mobilization or demobilization durations are shorter than 4 days each).

2.1.2.18 Season or Weather Delays. It is assumed that winter dismantlement will be acceptable and that no weather delays will occur.

2.1.2.19 Equipment Failure. It is assumed that no major equipment failure will occur that could impact the schedule critical path. It is assumed that schedule process durations and time estimates will adequately capture the requirements for preventive and minor maintenance.

2.1.2.20 Procured Services. It is assumed that procured services will not cause delays and will be received as planned.

2.1.2.21 Schedule Contingency. For the purpose of this plan only, no schedule contingency (i.e., allowance) will be assumed when developing the timeline for the post-retrieval life-cycle phases. Ordinarily, schedule contingency would be included for items such as potential change orders, field problems, and materials, equipment, and service delays to the project.

2.1.3 Interface Assumptions

2.1.3.1 Idaho National Engineering and Environmental Laboratory Comprehensive Environmental Response, Compensation and Liability Act Disposal Facility Interface. It is assumed that the INEEL CERCLA Disposal Facility (ICDF) will be open and have sufficient availability to treat and dispose of the waste identified in Section 4 of this document for disposition at ICDF. In addition, it is assumed that the only costs to the project for such disposition will be characterization, transportation, and container costs. Once materials are delivered to the ICDF, the project will no longer accrue any costs related to treatment or disposal. This assumption is in agreement with the current ICDF scope and plan of operations.

Note: If the ICDF is not able to accept some or all of the low-level waste (LLW) generated during D&D&D activities (e.g., facility not yet open, available disposal space already allocated, or insufficient staffing to process additional waste), it is assumed that disposal will occur at an off-Site treatment, storage, or disposal facility (TSDF) permitted to receive such waste (e.g., Envirocare in Utah).

2.1.3.2 Advanced Mixed Waste Treatment Project Interface. It is assumed that a portion of the waste materials resulting from the shutdown and D&D&D activities cannot reasonably be decontaminated to below 10 nCi/g for TRU contaminants. Further, it is assumed that the AMWTP will accept such materials for processing and disposal. In addition, it is assumed that an agreement to this

effect will be successfully negotiated with the AMWTP operating contractor and documented in an interface agreement between the project and the AMWTP.

2.1.3.3 Waste Stream Disposition. It is assumed that disposition paths will be available for waste streams generated during post-retrieval operations.

2.1.4 Radiological, Criticality, and Safety Basis Assumptions

2.1.4.1 Worker Location and Protection. It is assumed that the worker safety basis will be bounded by the approved final documented safety analysis (when completed), job safety analyses, project health and safety plans (HASPs), a critical safety evaluation, the Fire Hazards Analysis (Gosswiller 2002), and operations procedures.

2.1.4.2 Remote Handling. During facility shutdown, layup, and D&D&D operations, radioactive waste materials will not be present in such quantities that would require remote handling of decontamination and D&D&D waste streams.

2.1.4.3 Criticality. During post-retrieval project phases, fissile materials will not be present in quantities that, if accumulated, would cause the potential for a nuclear criticality to exceed the level of extremely unlikely.

2.1.4.4 Contamination Levels. It is assumed that alpha contamination levels inside the RCS and gloveboxes may exceed 1×10^6 dpm per 100 cm^2 and that adequate PPE will be available to allow personnel entry into these confinement areas.

2.1.4.5 Radiological Conditions. It is assumed that no unexpected radiological conditions will be encountered during shutdown, layup, or D&D&D activities.

2.1.5 Shutdown Assumptions

2.1.5.1 Safe Shutdown. It is assumed that the facility will transition to safe shutdown after operations.

2.1.5.2 Retrieval Operations Completed. It is assumed that retrieval operations will be completed before initiation of this work. It is assumed that no drums of waste will be returned to the project from the AMWTP after initiation of this work. It is assumed that any materials from excavation that could not be processed during retrieval operations have been either dispositioned (e.g., disposed of) during retrieval operations or returned to the open excavation before initiation of this work. It is assumed that any materials returned to the open excavation will be placed at least 0.9 m (3 ft) below grade.

2.1.5.3 Post-Retrieval Facility Condition. It is assumed the conditions identified in Section 2.3.1 are valid and reflect the actual condition of the excavation, the facility, and the retrieved waste.

2.1.5.4 Condition of Probes. It is assumed that several of the probes will be pulled out and laid on their sides within the excavation and that all parts of these probes will be at least 0.9 m (3 ft) below grade. Further, it assumed that the remaining probes (those not pulled [see definitions]) will be in the original,

installed positions (i.e., vertical) and will require partial removal (i.e., down to 0.9 m [3 ft] below grade) during the facility shutdown or D&D&D phase.

2.1.5.5 Confinement of Contamination. It is assumed that negligible contamination will be spread outside of the confinement area boundary during retrieval operations. This includes contamination spread (1) from personnel entry and exit, (2) through the excavator hydraulic fluid from an accident or from a confinement breach (e.g., loss of a glove), (3) from breach of a bag during drumout operations or sample bag-out, (4) from H&V system failure, or (5) from an uncontained leak path. Unexpected contamination of equipment and structures has the potential to change the shutdown and D&D&D approaches as well as disposition options for materials.

2.1.5.6 Overburden Disposition. It is assumed that project management approval will be received (with agency concurrence) to backfill the excavated waste zone with a clean, weak (i.e., nonmonolithic) grout in lieu of the overburden material removed from the excavation area as described in the project CDR (INEEL 2002b; Burton 2002). In addition, it is assumed that final disposition paths for the removed overburden material include (1) disposal at the ICDF or the RWMC LLW pit or (2) reuse as OU 7-10 overburden through reinstallation over the grout backfill.

2.1.6 Layup Assumptions

2.1.6.1 Layup. It is assumed that a layup period where the facility is monitored and maintained in a safe shutdown condition will be required while D&D&D preparations are performed (e.g., documents and plans developed, facility characterized, readiness assessment conducted, work crews mobilized, and certain facility systems reactivated).

2.1.6.2 Maintenance. It is assumed that no equipment modifications or servicing will be required beyond normal planned maintenance and repairs.

2.1.6.3 Layup Duration. It is assumed that the layup period duration will be only as long as necessary to prepare for D&D&D, receive authorization to proceed, and initiate the D&D&D phase. The duration of this period is assumed to be less than 1 year such that the facility design life will not be exceeded.

2.1.7 Deactivation, Decontamination, and Decommissioning Assumptions

2.1.7.1 Ending Conditions. It is assumed that Section 2.3.2 accurately describes the conditions that must be achieved during D&D&D for project closeout.

2.1.7.2 Final Backfill. It is assumed that a final backfill of approved fill material (e.g., protective soil cover layer) to a depth of 0.9 m (3 ft), as measured from the top of the initial backfill (i.e., grout) to finished grade, will be sufficient to provide interim protection of workers, the public, and the environment until such time that more permanent measures are implemented.

2.1.7.3 Cross Contamination of Overburden. It is assumed that no cross contamination of overburden will occur during retrieval operations. This includes the assumption that no subsidence of soil will occur from behind the shoring box at any time such that the overburden behind it becomes contaminated.

2.1.7.4 Transportation Permits. It is assumed that no transportation permits will be required for movement of materials resulting from D&D&D.

2.1.7.5 Dismantlement Site Access and Lay-Down Area. It is assumed that the main LMAES (i.e., north) gate will be used for access during dismantlement, and the area between the LMAES processing building and OU 7-10 will be available for use as the main lay-down area. It is assumed that an additional lay-down area will be available north of the LMAES fenced area.

2.1.7.6 Sizing. The RCS, all material and equipment inside the RCS, and the PGSs and internal equipment will be assumed contaminated and will be sized and loaded into soft-sided waste bags or approved waste boxes.

2.1.7.7 Mixed Low-Level Waste. The RCS, all material and equipment inside the RCS, and the PGSs and internal equipment (except as otherwise identified in Table 1) will be considered mixed low-level waste (MLLW) and will be transported to the ICDF for disposal or, if ICDF is unavailable, to an off-Site TSDF.

Table 1. Equipment and expected disposition paths following completion of the OU 7-10 Glovebox Excavator Method Project.

Waste Stream Description	Expected Waste Type(s)	Planned Primary Disposition[a]
Air compressors (breathing air trailer and plant air compressor) and receiver tanks	Not applicable (NA) – not a waste	Survey and release for reuse within the DOE complex.
Cameras, monitors and video cassette recorders	NA	Survey and release for reuse within the DOE complex.
Cargo containers	NA	Survey and release for reuse within the DOE complex.
Compressed gas cylinders (full, partially filled, or empty)	NA	Central Facilities Area property control for reuse.
Concrete support pads (miscellaneous)	Industrial waste (IW)	INEEL landfill.
Decontamination trailer (if used)	NA	Survey and release for reuse within the DOE complex.
Drum-handling equipment	NA	Survey and release for reuse within the DOE complex.
Drum-out bag stubs (in Packaging Glovebox System [PGS])	Mixed transuranic waste (MTRU)	AMWTP Facility.
Drum-out enclosures, including enclosure panels, doors, windows, and support structure (part of PGS)	LLW	ICDF

Table 1. (continued).

Waste Stream Description	Expected Waste Type(s)	Planned Primary Disposition[a]
Dust suppression system (internal to Retrieval Confinement Structure [RCS])	LLW	ICDF
Dust-suppression system (piping system outside confinement area boundary)	IW	INEEL landfill.
Dust-suppression system (skid with pumps, tanks, and controls)	NA	Survey and release for reuse within the DOE complex.
Excavator body	NA	Survey and release for reuse within the DOE complex Note: The possibility is high that the costs of decontamination to allow reuse of the excavator will exceed the value of the excavator. This depends on the level of contamination in the facility and the ability of the excavator seals to keep the contamination from entering the hydraulic system. If the excavator is not released for reuse, hazardous components, such as the battery, fuel, oil, and hydraulic system will be removed and disposed of appropriately, and the excavator body will be disposed of at ICDF. The hydraulic fluids, greases, and hydraulic system will be MTRU waste and will be sent to the AMWTP.
Excavator arm	MLLW	ICDF
Excavator end effectors (including buckets and hydraulic hammer attachment)	LLW	ICDF
Electrical equipment (i.e., breaker boxes and transformers)	NA	Survey and release for reuse within the DOE complex.
Electrical wiring and outlets	IW	INEEL landfill.
Eye wash stations	NA	Survey and release for reuse within the DOE complex.
FFS outside RCS (flooring and decking)	IW	INEEL landfill.
FFS flooring inside RCS (all structural members and skirt)	LLW	ICDF
Fire protection system for Weather Enclosure Structure (WES)	IW	INEEL landfill

Table 1. (continued).

Waste Stream Description	Expected Waste Type(s)	Planned Primary Disposition[a]
Fire protection distribution equipment for RCS and PGS—components outside the confinement area boundaries	IW	INEEL landfill
Fire protection panels and controls for WES and RCS	NA	Survey and release for reuse within the DOE complex
Fire protection system for RCS and PGS—piping and nozzles inside confinement area boundary	LLW	ICDF
Fire protection system skid for PGS	NA	Survey and release for reuse within the DOE complex
Fissile monitor systems (in PGS)	NA	Survey and release for reuse
Forklift battery charging stations	NA	Survey and release for reuse within the DOE complex
Forklifts	NA	Survey and release for reuse within the DOE complex
Generator—standby diesel	NA	Survey and release for reuse
Geotextile fabric cover from pit	LLW	ICDF
Gloves—RCS and PGS	MTRU	AMWTP Facility
Gravel fill material (access ramp and FFS leveling course)	LLW	ICDF (as cover or fill)
H&V ducting from RCS to HEPA housings	LLW	ICDF
H&V system (motors, controls, and resistance heating units)	NA	Survey and release for reuse within the DOE complex
HEPA filters and housings	MTRU	AMWTP Facility
HEPA inlet filters and housings	MTRU	AMWTP Facility
H&V ducting and stack downstream from HEPA filters and fans	LLW	ICDF
Lighting systems for WES, RCS, and PGS	IW	INEEL landfill
H&V ducting in PGS	LLW	ICDF
Monitoring system – criticality (criticality alarm system)	NA	Survey and release for reuse within the DOE complex

Table 1. (continued).

Waste Stream Description	Expected Waste Type(s)	Planned Primary Disposition[a]
Monitoring systems—remote air monitors, constant air monitors, and personnel contamination monitors	NA	Survey and release for reuse within the DOE complex
Office trailers	NA	Survey and release for reuse within the DOE complex
Overburden soil (in sacks)	LLW	ICDF or RWMC LLW pit (as cover or fill)
Overburden boxes	IW	INEEL landfill
Pallets	NA	Survey and release for reuse within the DOE complex
Personal protective equipment and shower trailer (if used)	NA	Survey and release for reuse
PGS hoists and fissile monitor well	MTRU	AMWTP Facility
PGS glove ports	MTRU	AMWTP Facility
PGS skins or shells	LLW	ICDF
PGS support structures (external to confinement area boundary)	LLW (because of association with attachment to PGS skin)	ICDF
PGS windows	LLW	ICDF
PGS working platforms	IW	INEEL landfill
Probes—cut off portions	LLW	ICDF
RCS—skin, support structure, doors and windows	LLW	ICDF
Shoring box	LLW	ICDF
Small tools and miscellaneous items (bagged out of RCS or the PGS)	MTRU	AMWTP Facility
Skid-mounted electrical load center	NA	Survey and release for reuse
Storage cabinets (including cold sample storage and storage shelving)	NA	Survey and release for reuse within the DOE complex
Transformers and panels	NA	Survey and release for reuse
Vacuums (in PGS)	MTRU	AMWTP Facility

Table 1. (continued).

Waste Stream Description	Expected Waste Type(s)	Planned Primary Disposition[a]
Waste transfer conveyance system components and subsystems (structure, carts, rails, and drive systems)	LLW	ICDF
Weigh scales	NA	Survey and release for reuse within the DOE complex
WES skin or shell (including personnel and overhead doors)	NA	Survey and release for reuse within the DOE complex
WES support structure	NA	Survey and release for reuse within the DOE complex
WES vestibule (walls and roof)	IW	INEEL landfill

a. Expected disposition path for the majority of the identified equipment and material, subject to applicable waste acceptance criteria.

2.1.7.8 Steel Deck and Weather Enclosure Structure. It is assumed that radiological surveys in preparation for the release of the WES and portions of the FFS steel decking material located outside of the RCS boundary will detect no contamination from project operations. Dismantlement of these structures will be performed in such a manner that the resultant materials can be transported to the storage area at Central Facilities Area (CFA) for potential reuse at the INEEL.

2.1.7.9 Equipment and Material Salvaging. It is assumed that no salvaging of equipment and materials will occur except as identified in Table 1.

2.2 Requirements

This section identifies requirement source documents that apply to the post-retrieval life-cycle phases of the project. Section 2.2.1 identifies those requirement sources that will have broad applicability to all post-retrieval phases. Section 2.2.2 identifies requirement sources and select requirements that will apply to the individual phases (i.e., shutdown, layup, and D&D&D).

2.2.1 Governing and General Requirements

Requirement documents referenced in this section apply to all post-retrieval phases of the project.

2.2.1.1 Contractual Requirements. Post-retrieval project activities will be performed in accordance with the requirements identified in Contract No. DE-AC07-99ID13727 (CF&AO-M&O-02-029). These will include the requirements contained in applicable laws, regulations, and DOE directives as defined by Lists A and B to the contract (i.e., the versions in effect at the start of shutdown). The requirements contained in the listed source documents are included herein by reference only. If, on review, the INEEL management control procedures (i.e., companywide procedures that define how the INEEL and the project will comply with these requirements) are deemed inadequate for completing the scope of post-retrieval activities, INEEL-recognized subject matter experts will be

contacted to provide interpretations of the contractual requirements and to obtain guidance on modifying or creating new procedures.

2.2.1.2 Record of Decision Applicable or Relevant and Appropriate Requirements.

Table 2 identifies the OU 7-10 ROD ARARs that apply to the post-retrieval phases of the project.

Table 2. Applicable or relevant and appropriate requirements.

Source[a]	Comments and Applicability
State of Idaho, Idaho Administrative Procedures Act (IDAPA), IDAPA 58.01.01.650, "Rules and Standards for Air Pollution Control," and IDAPA 58.01.01.651, "Rules for Control of Fugitive Dust."	Applies to the shutdown and D&D&D phases when dust could be generated.
IDAPA 58.01.05.004 (40 CFR 260.20 and 260.22), "Hazardous Waste Management (HWM) System."	Applies to secondary waste and D&D&D debris created during cleaning and D&D&D activities.
IDAPA 58.01.05.005 (40 CFR 261 Subpart C, "Characteristic Hazardous Waste," 261.20 to 261.24), "Identification and Listing of Hazardous Waste."	Applies to secondary waste and D&D&D debris created during cleaning and D&D&D activities.
IDAPA 58.01.05.011 (40 CFR 268.41 to 268.43), "Land Disposal Restriction (LDR) Treatment Standards."	Current LDRs may apply to waste (D&D&D or secondary waste) that is generated during cleaning and D&D&D activities if it is sent to the ICDF or AMWTP Facility for disposal.
40 CFR 260, "Hazardous Waste Management System: General."	Applies to secondary waste and D&D&D debris created during cleaning and D&D&D activities.
40 CFR 261, "Identification and Listing of Hazardous Waste."	Applies to secondary waste and D&D&D debris created during cleaning and D&D&D activities.
40 CFR 264, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Activities."	Applies to secondary waste and D&D&D debris created during cleaning and D&D&D activities.
40 CFR 268, "Land Disposal Restrictions."	Current LDRs may apply to waste (D&D&D or secondary waste) that is generated during cleaning and D&D&D activities if it is sent to the ICDF or AMWTP Facility for disposal.
40 CFR 61, "National Emission Standards for Hazardous Pollutants."	Applies to stack emissions during the shutdown, layup, and D&D&D project phases.
40 CFR 761, "Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions."	Applies to secondary waste and D&D&D debris created during cleaning and D&D&D activities if PCBs are present.

a. The Idaho Administrative Procedures Act numbering scheme has been changed since the applicable or relevant and appropriate requirements were first identified in the OU 7-10 Record of Decision (DOE-ID 1993). The rules and standards section numbers contained in this table reflect the new scheme (i.e., the move from Section 16 to Section 58).

2.2.1.3 Record of Decision To-Be-Considered Guidance.

Table 3 identifies the OU 7-10 ROD TBC guidance requirements that directly apply to the post-retrieval operation phases of the project.

Table 3. To-be-considered guidance requirements.

Source	Comments and Applicability
40 CFR 300, "National Oil and Hazardous Substances Pollution Contingency Plan."	To be determined (TBD)[a]
"A Guide to Delisting of RCRA Waste for Superfund Remedial Responses" (EPA 1990).	Not applicable (NA)
Focus on Closure Requirements (EPA 1989a).	TBD[a]
Superfund LDR Guide #1, Overview of RCRA Land Disposal Restrictions (LDRs) (EPA 1989b).	TBD[a]
Toxic Air Pollutants Policy, State of Idaho, *New Source Review Policy for Toxic Air Pollutants.*	Applies to stack emissions during the shutdown, layup, and D&D&D project phases.
DOE O 5400.5, "Radiation Protection of the Public and the Environment."	Applies through List B (see Attachment G) of the Idaho National Engineering and Environmental Laboratory management and operating (M&O) contract to the control of radiological and hazardous contaminants within project facilities.
DOE O 5820.2A, "Radioactive Waste Management."	Cancelled (July 1999) by DOE O 435.1, "Radioactive Waste Management"; and by DOE M 435.1-1, "Radioactive Waste Management Manual."

a. To be resolved by an engineering design file on record of decision applicable or relevant and appropriate requirements being prepared by project environmental personnel.

2.2.1.4 Other General Requirements. Table 4 identifies selected requirement sources that apply to the post-retrieval operation phases of the project. Identified versions are those that were in effect at the time this plan was generated. Performance of activities during the post-retrieval phase will be in accordance with INEEL procedures that implement regulatory and DOE requirements in effect at that time.

Table 4. Other general requirements that apply to the post-retrieval operation phases.

Source	Comments and Applicability
10 CFR 71, 2002, "Packaging and Transportation of Radioactive Materials."	Applicable, on List A (Attachment K) of the INEEL M&O contract.
10 CFR 820, 2002, "Procedural Rules for DOE Nuclear Activities," Appendix A, "General Statement of Enforcement Policy."	Applicable, on List A (Attachment K) of the INEEL M&O contract. Price Anderson Amendment Act regulations (10 CFR 820).
10 CFR 830, 2002, "Nuclear Safety Management," Subpart A, "Quality Assurance Requirements."	For example, applicable to data quality objectives, end-state verification, and recordkeeping for D&D&D.
10 CFR 830, 2002, "Nuclear Safety Management," Subpart B, "Safety Basis Requirements."	Applicable, on List A (Attachment K) of the INEEL M&O contract.
10 CFR 835, 2002, "Occupational Radiation Protection."	Applicable, on List A (Attachment K) of the INEEL M&O contract.
29 CFR 1910, 2002, "Occupational Safety and Health Standards."	Applicable, on List A (Attachment K) of the INEEL M&O contract.
29 CFR 1926, 2002, "Safety and Health Regulations for Construction."	Applicable, on List A (Attachment K) of the INEEL M&O contract.
40 CFR 112, 2002, "Oil Pollution Prevention, Code of Federal Regulations."	Not applicable. Project is storing less than regulatory limits (i.e., 1,320-gal aboveground total and no single container contains more than 660 gal).
Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA/Superfund) (42 USC § 9601 et seq.)	The OU 7-10 Glovebox Excavator Method Project is a CERCLA project.
49 CFR 173, 2002, "Shippers—General Requirements for Shipments and Packagings."	Applicable, on List A (Attachment K) of the INEEL M&O contract.
Companywide *Manual 14A - Safety and Health – Occupational Safety and Fire Protection* and *Manual 14B - Safety and Health Occupational Medical and Industrial Hygiene,* 2002.	Applicable to all fieldwork at INEEL.
DOE O 420.1, 2000, "Facility Safety," Change 3, November 22, 2000, U.S. Department of Energy.	Applicable, on List B (Attachment G) of the INEEL M&O contract.
DOE O 460.1A, 1996, "Packaging and Transportation Safety," October 2, 1996, U.S. Department of Energy.	Applicable, on List B (Attachment G) of the INEEL M&O contract.

Table 4. (continued).

Source	Comments and Applicability
DOE O 5400.1, 1990, "General Environmental Protection Program," Change 1, June 29, 1990, U.S. Department of Energy (Note: Specific paragraphs cancelled by DOE O 231.1, "Environmental, Safety, and Health Reporting," Change 2, November 11, 1996.	Applicable, on List B (Attachment G) of the INEEL M&O contract.
DOE-HDBK-1132-99, 2001, *Implementation Guide for Use in Developing Documented Safety Analysis to Meet Subpart B of 10 CFR 830,* U.S. Department of Energy.	Applicable to safety analysis evolutions performed during the post-retrieval life-cycle phases.
DOE-ID N 430.1A, 1998, *Life Cycle Asset Management: ID Expectations*, U.S. Department of Energy Idaho Operations Office, Idaho Falls, Idaho.	Applicable, on List B of the INEEL M&O contract.
DOE-ID O 420.D, 2000, *Requirements and Guidance for Safety Analysis*, U.S. Department of Energy Idaho Operations Office, Idaho Falls, Idaho.	Would apply to safety analyses requiring U.S. Department of Energy approval or documented safety analysis revisions that are executed during the layup or D&D&D phases of the project.
DOE-ID O 440.C, 2000, *Hoisting and Rigging Program,* U.S. Department of Energy Idaho Operations Office, Idaho Falls, Idaho.	Applicable to project hoisting or rigging that occurs during the post-retrieval life-cycle phases.
DOE-ID, 1991, *Federal Facility Agreement and Consent Order for the Idaho National Engineering Laboratory,* Administrative Record No. 1088-06-29-120, U.S. Department of Energy Idaho Operations Office; U.S. Environmental Protection Agency, Region 10; and Idaho Department of Health and Welfare.	Applicable, defines CERCLA process for INEEL past waste sites including OU 7-10.
DOE-ID, 1993, *Record of Decision: Declaration of Pit 9 at the Radioactive Waste Management Complex Subsurface Disposal Area at the Idaho National Engineering Laboratory, Idaho Falls, Idaho*, Administrative Record No. 5569, U.S. Department of Energy Idaho Operations Office; U.S. Environmental Protection Agency, Region 10; and the Idaho Department of Health and Welfare.	Applicable, this is the ROD for OU 7-10.[a]

Table 4. (continued).

Source	Comments and Applicability
DOE-ID, 1995, *Explanation of Significant Differences for the Pit 9 Interim Action Record of Decision at the Radioactive Waste Management Complex at the Idaho National Engineering Laboratory*, U.S. Department of Energy Idaho Operations Office; U.S. Environmental Protection Agency, Region 10; and the Idaho Department of Health and Welfare.	Applies through OU 7-10 ROD.[a]
DOE-ID, 1998, *Explanation of Significant Differences for the Pit 9 Interim Action Record of Decision at the Radioactive Waste Management Complex at the Idaho National Engineering and Environmental Laboratory*, Administrative Record No. 10537, U.S. Department of Energy, Idaho Field Office; U.S. Environmental Protection Agency, Region 10; and the Idaho Department of Health and Welfare.	Applies through OU 7-10 ROD.[a]
DOE-ID, 2001a, *Architectural Engineering Standards*, Rev. 28, U.S. Department of Energy Idaho Operations Office, Idaho Falls, Idaho.	Would apply to any temporary structures built during D&D&D.
PRD-183, 2000, *Manual 15A - INEEL Radiological Control Manual*, Rev. 6, July 6, 2000.	Applicable radiological control activities and also to all work performed in radiological areas at the INEEL.
DOE, 2002, *Agreement to Resolve Disputes, the State of Idaho, United States Environmental Protection Agency, United States Department of Energy*, U.S. Department of Energy, State of Idaho, U.S. Environmental Protection Agency.	Amends enforceable milestones as previously identified in the Federal Facility Agreement and Consent Order, the OU 7-10 ROD,[a] and OU 7-10 Remedial Design and Remedial Action Scope of Work.[b]

a. DOE-ID, 1993, *Record of Decision: Declaration of Pit 9 at the Radioactive Waste Management Complex Subsurface Disposal Area at the Idaho National Engineering Laboratory, Idaho Falls, Idaho.*
b. LMITCO, 1997, *Remedial Design/Remedial Action Scope of Work and Remedial Design Work Plan: Operable Unit OU 7-10 (Pit 9 Project Interim Action).*

2.2.2 Phase-Specific Requirements

The requirements contained in the following subsections are specific to the life-cycle phase of the facility. Technical and functional requirements are from Revision 2 of the T&FR document (INEEL 2002a); however, Revision 3 of the T&FR document was nearing completion at the time this plan was developed.

2.2.2.1 Shutdown Requirements. This section identifies the requirements that are specific to the shutdown phase of the post-retrieval period (see Table 5).

Table 5. Shutdown requirements specific to the post-retrieval period of the project.

Source[a]	Requirement Text	Comments and Applicability
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements*, Section 3.1.2.5-1	The project shall store overburden removed from Pit 9 for future disposition. • Basis: WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001, Section 4.3.1, Modification Description. Disposition of soil is not determined. Several disposition potentials exist depending on results of characterization analysis. Overburden soil removed to a mutually agreed upon depth can be returned to the excavation. Interstitial soil is handled as part of "waste zone material." EDF-3032, *OU 7-10 Glovebox Excavator Method Project Storage Requirements and Approach*.	Requirement continues into post-retrieval phases until final overburden disposition. Overburden may be disposed of earlier however, for example, during retrieval operations.
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements*, Section 3.1.2.5-2	The project shall store overburden in a manner that prevents contamination from other materials. • Basis: Overburden contains contaminants of concern at below risk-based concern levels that would require special handling per the Preliminary Hazards Analysis. EDF-3032, *OU 7-10 Glovebox Excavator Method Project Storage Requirements and Approach*.[b]	Requirement continues into post-retrieval phases if not disposed of during retrieval operations.
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements*, Section 3.1.2.5-3	The project shall store overburden in a manner that prevents contamination of other materials or the environment. • Basis: The requirement for material management of overburden is independent of its transuranic content. EDF-3032, *OU 7-10 Glovebox Excavator Method Project Storage Requirements and Approach*.[b]	Requirement continues into post-retrieval phases if not disposed of during retrieval operations.
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements*, Section 3.2.2-3	The project shall protect against human exposure to radiation, airborne radionuclides, and hazardous chemicals during the OU 7-10 Glovebox Excavator Method Project operations. • Basis: To be protective, exposure limits must be less than or equal to ACGIH threshold limit values, OSHA permissible exposure levels, or NIOSH recommended exposure levels, whichever is less. DOE O 440.1A, "Worker Protection Management for DOE Federal and Contractor Employees," and 10 CFR 835, "Occupational Radiation Protection."	Deemed applicable to post-retrieval phase operations as well as to waste retrieval, sampling, and packaging operations.
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements*, Section 3.2.5-4	The project shall maintain temperatures that allow normal equipment operation inside the confinement. • Basis: Temperature in the facility must not fall below a point at which the equipment will not be able to be operated. All equipment will operate satisfactorily if the comfort zone temperatures required by Section 1550 of the DOE-ID *Architectural Engineering Standards* are met.	The Weather Enclosure Structure (WES) radiation monitoring equipment has minimum temperature requirements for proper functioning.

Table 5. (continued).

Source[a]	Requirement Text	Comments and Applicability
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements*, Section 3.2.7-1	The project shall control releases of hazardous and radioactive effluents to the environment within the limits referenced in DOE O 5400.1, "General Environmental Protection Program"; DOE O 5400.5, "Radiation Protection of the Public and the Environment; and the National Contingency Plan (NCP)."[c] • Basis: The primary long-term objective is to provide for long-term protection of human health and the environment; it is also important to provide for the short-term safety and health of the environment, community, and workers. This is to include the short-term risk assessment as per the NCP.	Applies to the continued control of radioactive and hazardous contaminants within the project facility and to radiological and hazardous waste generated during the shutdown period.
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements*, Section 3.2.7-2	The project shall maintain releases of radioactive materials to the environment and community within acceptable limits as defined by 40 CFR 61, "National Emission Standards For Hazardous Air Pollutants (NESHAPS)," Subpart H. • Basis: Provides for protection of human health and the environment.	Applies to stack emissions during the shutdown period (i.e., heating and ventilation [H&V] system will remain operational until sometime during D&D&D).
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements*, Section 3.3.5-2	The project shall monitor for emissions of radioactive contaminants to the environment. • Basis: Records will be kept of emission measurements.	Because the H&V system will remain in operation during shutdown, the stack monitoring system will likely be necessary unless an air emissions evaluation for this period indicates otherwise.
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements*, Section 3.3.7-1	The project shall be designed, constructed, operated, and maintained in a manner that prevents fires and explosions. • Basis: DOE O 420.1, "Facility Safety"; and NFPA 801-1998, *Standard for Fire Protection for Facilities Handling Radioactive Materials*. The design must consider the operational aspects of the facility and their associated fire hazards and incorporate proper controls through sound design practice to minimize the potential for fire occurrences.	Requirement is applicable through shutdown and layup until the facility is dismantled.

Table 5. (continued).

Source[a]	Requirement Text	Comments and Applicability
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements,* Section 3.5.3-4	The project shall be capable of safe shutdown of the retrieval facility for 1 year at closure. • Basis: Waste Area Group 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001, Section 4.3.2, Schedule Estimate, Closeout. Closeout encompasses those activities necessary for placing the facility in safe shutdown. The excavation will be stabilized by backfilling after waste retrieval and before safe shutdown at closure. The current approach is that there will not be a 1-year safe shutdown period as previously included in the WAG 7 Analysis of OU 7-10 Stage II Modifications report; however, the capability will exist.	The facility must be designed to allow this; however, D&D&D is assumed to occur as soon as practical after shutdown.
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements,* Section 3.5.3-5	The project shall stabilize the excavation after waste retrieval by backfilling the excavation. • Basis: The backfill prevents airborne spread of contamination. It is necessary to backfill the excavation in order to place the facility in safe shutdown. *Waste Area Group 7 Analysis of OU 7-10 Stage II Modifications*, October 1, 2001, Section 4.3.2, Schedule Estimate, Closeout. Closeout encompasses those activities necessary for placing the facility in safe shutdown.	This is planned to occur during facility shutdown.
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements,* Section 3.5.5-3	The project shall select, as practical, design and procedure options that minimize production of secondary waste in the retrieval, handling, and storage of soils and waste. • Basis: Secondary waste is waste other than those currently in Pit 9.	Should apply to shutdown and D&D&D phases as well.

a. All references to the *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements* (T&FR) (INEEL/EXT-1998-00444) are to Revision 2 published in January 2002.
b. The basis statement for this requirement in the T&FR, Revision 2, is in error. No approved preliminary hazards assessment for the OU 7-10 Glovebox Excavator Method Project currently exists. This error has been corrected in Revision 3 of the T&FR (Draft).
c. "National Oil and Hazardous Substances Pollution Contingency Plan" (40 CFR 300).

2.2.2.2 Layup Requirements. Table 6 identifies the requirements that are specific to the layup phase of post-retrieval operations.

Table 6. Layup requirements of post-retrieval operations (i.e., surveillance and maintenance).

Source[a]	Requirement Text	Comments and Applicability
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements*, Section 3.1.2.5-2	The project shall utilize the services that are available from RWMC/INEEL. • Basis: "Services" refers to RWMC/INEEL capabilities such as the Analytical Lab, Stored Waste Examination Pilot Plant (SWEPP), RWMC storage building, and transportation.	Such services should be considered when determining who performs surveillance and maintenance during the layup phase.
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements,* Section 3.2.2-3	The project shall protect against human exposure to radiation, airborne radionuclides, and hazardous chemicals during the OU 7-10 Glovebox Excavator Method Project operations. • Basis: To be protective, exposure limits must be less than or equal to ACGIH threshold limit values, OSHA permissible exposure levels, or NIOSH recommended exposure levels, whichever is less. DOE O 440.1A, "Worker Protection Management for DOE Federal and Contractor Employees," and 10 CFR 835, "Occupational Radiation Protection."	Deemed applicable to post-retrieval phase operations as well as to waste retrieval, sampling, and packaging operations.
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements,* Section 3.2.5-4	The project shall maintain temperatures that allow normal equipment operation inside the confinement. • Basis: Temperature in the facility must not fall below a point at which the equipment will not be able to be operated. All equipment will operate satisfactorily if the comfort zone temperatures required by Section 1550 of the DOE-ID *Architectural Engineering Standards* are met.	The WES radiation monitoring equipment has minimum temperature requirements for proper functioning.
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements,* Section 3.2.7-1	The project shall control releases of hazardous and radioactive effluents to the environment within the limits referenced in DOE O 5400.1, "General Environmental Protection Program"; DOE O 5400.5, "Radiation Protection of the Public and the Environment; and the National Contingency Plan (NCP)." • Basis: The primary long-term objective is to provide for long-term protection of human health and the environment; it is also important to provide for the short-term safety and health of the environment, community, and workers. This is to include the short-term risk assessment as per the NCP.	Applies to the continued control of residual radioactive and hazardous contaminants within the project facility and to any radiological or hazardous waste generated during the layup period.

Table 6. (continued).

Source[a]	Requirement Text	Comments and Applicability
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements,* Section 3.2.7-2	The project shall maintain releases of radioactive materials to the environment and community within acceptable limits as defined by 40 CFR 61, "National Emission Standards For Hazardous Air Pollutants (NESHAPS)," Subpart H. • Basis: Provides for protection of human health and the environment.	Applies to stack emissions during the layup period (i.e., heating and ventilation system [H&V] remains operational until sometime during D&D&D). An air emissions evaluation for this period may indicate that stack monitoring is no longer necessary.
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements,* Section 3.3.5-2	The project shall monitor for emissions of radioactive contaminants to the environment. • Basis: Records will be kept of emission measurements.	Because the H&V system will remain in operation during layup, the stack monitoring system will likely be necessary unless an air emission evaluation for this period indicates otherwise.
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements,* Section 3.3.7-1	The project shall be designed, constructed, operated, and maintained in a manner that prevents fires and explosions. • Basis: DOE O 420.1, "Facility Safety"; and NFPA 801-1998, *Standard for Fire Protection for Facilities Handling Radioactive Materials.* The design must consider the operational aspects of the facility and their associated fire hazards and incorporate proper controls through sound design practice to minimize the potential for fire occurrences.	This requirement is applicable through layup until the facility is dismantled.

Table 6. (continued).

Source[a]	Requirement Text	Comments and Applicability
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements,* Section 3.5.3-4	The project shall be capable of safe shutdown of the retrieval facility for 1 year at closure. • Basis: WAG 7 Analysis of OU 7-10 Stage II Modifications, October 1, 2001, Section 4.3.2, "Schedule Estimate, Closeout." Closeout encompasses those activities necessary for placing the facility in safe shutdown. The excavation will be stabilized by backfilling after waste retrieval and before safe shutdown at closure. The current approach is that there will not be a 1-year safe shutdown period as previously included in the WAG 7 Analysis of OU 7-10 Stage II Modifications report; however, the capability will exist.	The facility must be designed to allow this; however, D&D&D is assumed to occur as soon as practical after shutdown.

a. All references to the *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements* (INEEL/EXT-1998-00444) are to Revision 2 published in January 2002.

2.2.2.3 Deactivation, Decontamination, and Decommissioning Requirements. Table 7 identifies the requirements that are specific to the D&D&D phase of post-retrieval operations.

Table 7. Post-retrieval operations deactivation, decontamination, and decommissioning requirements.

Source[a]	Requirement Text	Comments and Applicability
40 CFR 761, "Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions"	Various: • 40 CFR 761 Sections 761.40 through 761.45, "Marking of PCBs and PCB Items" • Section 761.60, "Disposal Requirements" • Section 761.65, "Storage for Disposal" • Section 761.79, "Decontamination Standards and Procedures."	Applicable to equipment and materials that become contaminated with PCBs from the waste.
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements*, Section 3.1.3-2	The project shall utilize the services that are available from RWMC/INEEL. • Basis: "Services" refers to RWMC/INEEL capabilities such as the Analytical Lab, Stored Waste Examination Pilot Plant (SWEPP), RWMC storage building, and transportation.	Such services should be considered when determining who performs the D&D&D and material disposition activities.

Table 7. (continued).

Source[a]	Requirement Text	Comments and Applicability
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements*, Section 3.2.7-1	The project shall control releases of hazardous and radioactive effluents to the environment within the limits referenced in DOE 5400.1, "General Environmental Protection Program"; DOE 5400.5, "Radiation Protection of the Public and the Environment; and the National Contingency Plan (NCP)." • Basis: The primary long-term objective is to provide for long-term protection of human health and the environment; it is also important to provide for the short-term safety and health of the environment, community, and workers. This is to include the short-term risk assessment as per the NCP.	These requirements will apply to the control of residual radioactive and hazardous contaminants within the facility and to any radiological and hazardous waste and debris generated as a result of D&D&D.
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements*, Section 3.2.7-2	The project shall maintain releases of radioactive materials to the environment and community within acceptable limits as defined by 40 CFR 61, "National Emission Standards For Hazardous Air Pollutants (NESHAPS)," Subpart H. • Basis: Provides for protection of human health and the environment.	Applies to any stack emissions during D&D&D if the H&V system is used during final decontamination or portions of dismantlement. An air emissions evaluation for this period may indicate that stack monitoring is no longer necessary.
INEEL/EXT-1998-00444, *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements*, Section 3.5.5-3	The project shall select, as practical, design and procedure options that minimize production of secondary waste in the retrieval, handling, and storage of soils and waste. • Basis: Secondary waste is waste other than those currently in Pit 9.	Should apply to shutdown and D&D&D phases as well.

a. All references to the *OU 7-10 Glovebox Excavator Method Project Technical and Functional Requirements* (INEEL/EXT-1998-00444) are to Revision 2 published in January 2002.

2.2.2.4 Material Disposition Requirements. Table 8 identifies the requirements that are specific to the final disposition (e.g., disposal) of equipment and materials resulting from D&D&D of project facilities.

Table 8. Material disposal and disposition requirements.

Source	Requirement Text	Comments and Applicability
Idaho National Engineering and Environmental Laboratory Reusable Property, Recyclable Materials, and Waste Acceptance Criteria (RRWAC) (DOE-ID 2001b)	Section 4.1, "Reusable Personal Property" Section 4.2, "Recyclable Materials" Section 4.3, "Industrial Waste" Section 4.4, "Hazardous Waste" Section 4.5, "Low-Level Waste" Section 4.6, "Mixed Low-Level Waste" Section 4.8, "Transuranic Waste" Section 4.9, "Mixed Transuranic Waste"	May apply if overburden or low-level waste from decontamination or dismantlement is sent to the RWMC for disposal.
ICDF waste acceptance criteria	To be determined.	Applies to low-level and mixed low-level secondary waste and debris sent to the ICDF for treatment or disposal.
AMWTP waste acceptance criteria (interface agreement between the OU 7-10 Glovebox Excavator Method Project and the AMWTP)	Refer to document text.	Applies to secondary waste and debris from shutdown and D&D&D that cannot reasonably be decontaminated to below 10 nCi/g transuranic radionuclides.
"Release of Surplus and Scrap Materials"[a]	"Also, I am suspending the unrestricted release for recycling of scrap metals from radiation areas within DOE facilities. This suspension will remain in effect until improvements in our release criteria and information management have been developed and implemented . . ." "Henceforth, the Department will not allow the release of scrap metals for recycling if contamination from DOE operations is detected using appropriate, commercially available monitoring equipment and approved procedures."	Applies to metals that contain, or are suspected to contain radioactive contamination from DOE operations including the OU 7-10 Glovebox Excavator Method Project.

Table 8. (continued).

Source	Requirement Text	Comments and Applicability
"DOE Concurrence Requested - BBWI approach to Disposition of Scrap Metal"[b]	"DOE agrees with the BBWI recommendation to dispose of scrap metal subject to the moratorium in the Central Facilities Area landfill, so long as it meets the landfill's waste acceptance criteria."	Applies to metals that contain, or suspected to contain, radioactive contamination from DOE operations including the OU 7-10 Glovebox Excavator Method Project.

a. Bill Richardson, Secretary of Energy, Memorandum to the Heads of Departmental Units, July 13, 2000, U.S. Department of Energy, "Release of Surplus and Scrap Materials."
b. W. H. Leake, U.S. Department of Energy Idaho Operations Office Memorandum to F. L. Webber, Idaho National Engineering and Environmental Laboratory, March 20, 2002, "DOE Concurrence Requested – BBWI Approach to Disposition of Scrap Metal."

2.3 Starting and Ending Conditions of Pit, Facility, and Area

2.3.1 Starting Conditions after Waste Retrieval and Packaging Operations

The facility shutdown phase will begin when retrieval operations have been completed and project management determines that the overall goals have been met. Operations personnel will remain responsible for activities through the shutdown phase and possibly the layup phase. Conditions expected in the retrieval area, the facility, and the waste retrieved from the pit are listed below.

2.3.1.1 Retrieval Area (Open Pit) Conditions

- An open pit will exist inside the RCS confinement area
- Side walls of waste will be exposed in the open pit and subjected to the natural angle of repose
- No subsidence will exist behind the pit shoring box
- Several probes have been pulled (see definitions) and positioned on their sides in the pit, completely (i.e., at least 0.9 m [3 ft]) below grade
- Several probes remain vertical in the pit (at the installed height) with the probe pulling caps that were installed before waste excavation and retrieval began.

2.3.1.2 Facility Conditions

- Waste spilled on the RCS floor that the excavator could reach has been returned to the pit
- Some waste remains on the RCS floor

- The PGS gloveboxes have been cleaned of pit debris (i.e., swept and vacuumed but not yet decontaminated)
- The levels of radiological contamination within the facility range between clean and higher than 1×10^6 dmp/100 cm^2, as shown in Figure 3
- The H&V system is operating within setpoint parameters established for waste excavation operations
- Lights are operational and switched on
- The RCS and PGS fire detection and suppression systems are operational
- Radiological monitors are operational and switched on
- Other equipment has been de-energized, but is capable of restart.

2.3.1.3 Waste Conditions

- All waste from retrieval operations has been dispositioned (i.e., accepted by the AMWTP Facility, returned to the excavation area, or other approved disposition)
- Overburden soil removed from the excavation area during retrieval operations may have been transferred to the ICDF or the RWMC LLW pit for disposal or beneficial use, or, if not yet dispositioned, remains outside the WES in sacks.

2.3.2 Ending Conditions after the Deactivation, Decontamination, and Decommissioning Phase

To properly define the D&D&D scope of activities and process necessary to achieve the desired facility disposition (i.e., facility dismantlement and removal followed by restoration of soil surface conditions to near pre-project conditions), the actual facility conditions (i.e., the starting point) as well as the ending conditions must be known and clearly defined, respectively. Starting conditions for the D&D&D life-cycle phase are described in Section 3.1.6. The proposed ending conditions for the excavated portion of OU 7-10, surrounding areas used by the project, project facility and equipment, and waste and debris generated by D&D&D are described in the Sections 2.3.2.1 to 2.3.2.3. This information will be used later during the development of the final D&D&D plan to help determine the extent of end-state criteria that must be defined, negotiated, and documented. End-state criteria for OU 7-10, discussed herein only in general terms, are assumed to be known and equivalent to the conditions existing before the start of the OU 7-10 Glovebox Excavator Method Project, with two notable exceptions. First, the final condition of the subsurface investigation probes will be different from pre-project conditions and second, a grout zone will have replaced the retrieved waste.

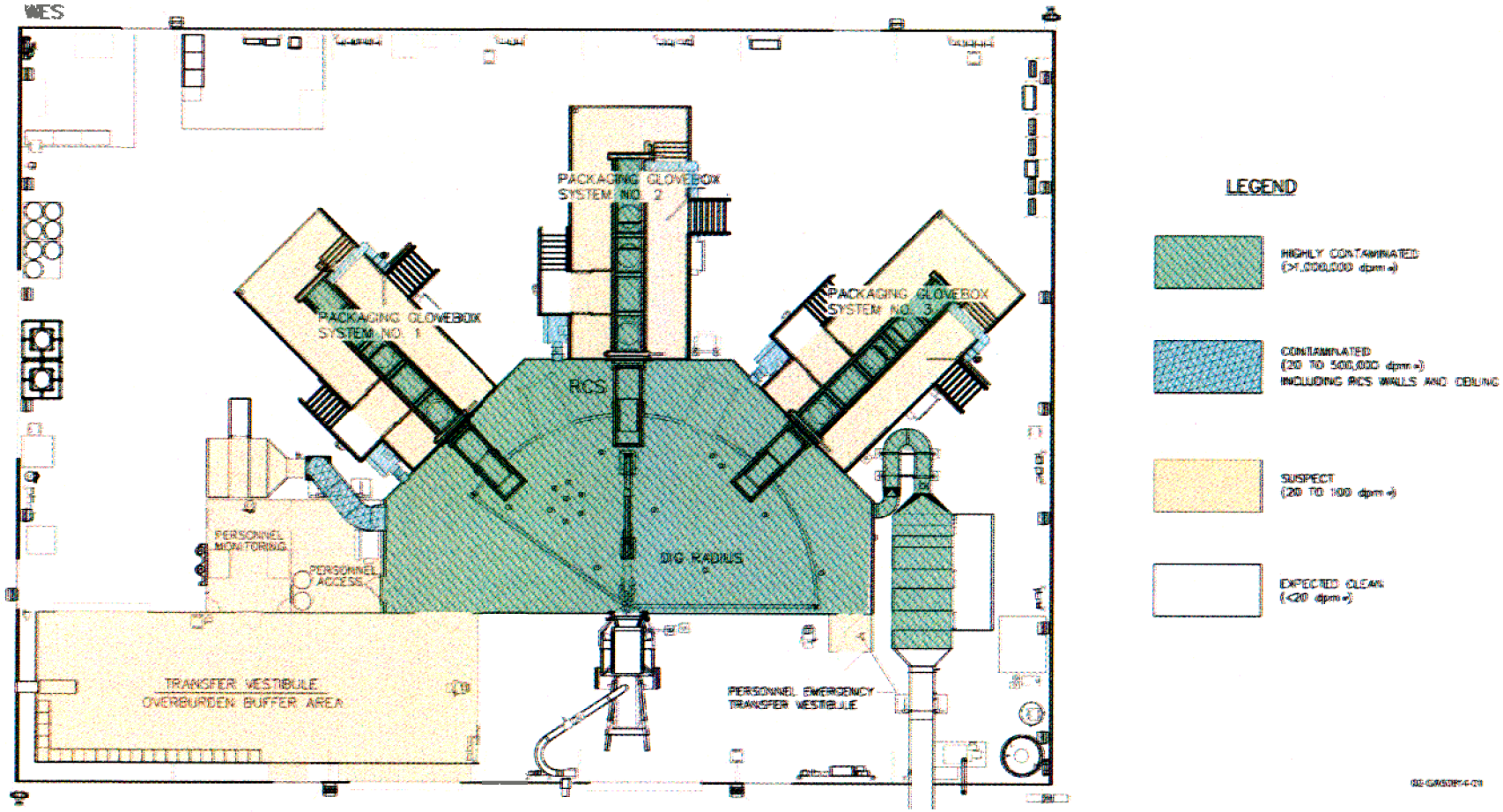

Figure 3. Anticipated facility contamination levels at start of shutdown phase.

2.3.2.1 Retrieval Area Conditions. The proposed ending conditions for the excavated portion of OU 7-10 and surrounding areas used by the project are described below:

- Initial backfill of the excavated portion of OU 7-10 will be complete. That is, clean grout will be added to a level 15 cm (6 in.) above the bottom of the shoring box (or 0.9 m [3 ft] below the top of the surrounding overburden). The grout material will be as described in Section 3.1.2.2.4. Subsurface investigation probes that were pulled during waste retrieval operations will be lying on their sides near the bottom of the backfilled excavation with all portions thereof at least 0.9 m (3 ft) below final grade. These probes will be empty, closed at both ends, and will have the probe handling cap installed. The subsurface investigation probes that were not removed during waste retrieval operations will be in a vertical position with their tops cut off at the grout level. These probes will not be capped at the top but will be closed at the bottom. They will be backfilled to within 15 cm (6 in.) of the top with sand, soil, clay (e.g., bentonite), or gravel. The final 15 cm (6 in.) of each probe will contain a bentonite plug to prevent future water intrusion.

- Final backfill of the excavated portion of OU 7-10 will be complete. This layer will comprise approved soil fill material that is approximately 0.9 m (3 ft) thick. The surface of the excavation area will be contoured to pre-project conditions and reseeded with native grasses (hydro-seed application). No radioactive contamination above background will be detectable.

- The shoring box will be dismantled and removed from the excavation area. The void created by the shoring box removal will be backfilled with clean soil fill material.

- Gravel from the FFS leveling course, access ramps, and temporary road on the OU 7-10 surface will be removed and the area underneath recontoured and reseeded with native grasses (hydro-seed application).

- The geotextile membrane under the FFS leveling course will be removed and the area underneath recontoured (as needed) and reseeded with native grasses (hydro-seed application).

2.3.2.2 Facility and Equipment Conditions. The following facilities will be totally removed for final disposition (e.g., reuse or disposal):

- The RCS, including inlet and exhaust ventilation system components, will be decontaminated to the extent necessary (with residual removable contamination immobilized), the structure will be dismantled, and the materials removed from the project area. Reusable equipment (e.g., video cameras and lights) will be cleaned and removed in a manner that allows reuse at the INEEL. Other materials will be processed as waste.

- The PGS, including inlet ventilation system components, will be decontaminated to the extent necessary (with residual removable contamination immobilized), the structure will be dismantled, and the materials removed from the project area. Reusable equipment (e.g., video cameras and fissile material monitors) will be cleaned and removed in a manner to allow reuse at the INEEL. Other materials will be processed as waste.

- The FFS will be decontaminated (where necessary), the residual removable contamination immobilized, the structure dismantled, and the materials removed from the project area. Steel decking will be dismantled in a manner to allow reuse at the INEEL. Other materials will be processed as waste.

- The WES, including the exhaust ventilation components and stack, will be dismantled and removed from the project area. Select equipment (e.g., water storage tanks, electrical panels, and resistance heating units), the fabric skin, and support structure will be removed in a manner that allows reuse at the INEEL. Other materials will be processed as waste.

- The interim storage shelter (if used) will be disassembled, removed from the project area, and sent to CFA for reuse at the INEEL.

- The breathing air trailer will be deactivated, disconnected, and sent to CFA for reuse at the INEEL.

- The plant air cabinet will be deactivated, removed from the rail footing structure, and sent to CFA for reuse at the INEEL.

- The Radiological Control field trailer will be disconnected from any utilities and sent to CFA for reuse at the INEEL.

- Forklifts and drum-handling equipment will be decontaminated and sent to CFA for reuse at the INEEL.

- The portable standby generator will be disconnected, removed from the project area, and sent to CFA for reuse at the INEEL.

- The skid-mounted load center will be disconnected, removed from the project area, and sent to CFA for reuse at the INEEL. Electrical feeder cables will be disconnected and removed from the project area. Reusable components will be sent to CFA for reuse at the INEEL. Other materials will be processed as waste.

- The fire riser structure will remain for potential use during Stage III. Fire water supply lines (and concrete support pads) leading from the fire riser structure to the WES will be dismantled, and removed from the project area. Reusable components will be sent to CFA for reuse at the INEEL. Other materials will be processed as waste.

- Cargo containers (if used) will be cleaned, disconnected from utilities, removed from the project area, and returned to the appropriate INEEL owner.

- The field support trailers (WMF-657, -645, -646, and, if used, WMF-613) will be vacant and returned to the landlord for reallocation.

- Any fencing materials will be removed, surveyed, and sent to CFA for reuse at the INEEL.

2.3.2.3 Waste Conditions. Disposition of secondary waste and debris resulting from D&D&D activities are listed below:

- Transuranic and mixed TRU (MTRU) waste will be packaged in approved containers and transferred to AMWTP for storage or treatment and disposal. Section 5 contains waste volume estimates for this category.

- Low-level waste and MLLW will be packaged in approved containers and transferred to ICDF for treatment and disposal. If ICDF is not available to receive this waste, the MLLW will be packaged and sent to disposal at an off-Site TSDF (e.g., Envirocare) and the LLW will be disposed of in the RWMC LLW landfill.

- Industrial waste will be transferred to the INEEL landfill located at CFA.